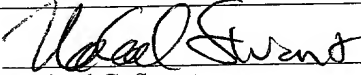


JC20 Rec'd PCT/PTO 19 FEB 2002

FORM PTO-1390 (REV 10-94)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		DOCKET #: 4925-209PUS
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371				
				U.S. APPLICATION NO. (If known, see 37 CFR 1.5) 10/069320
INTERNATIONAL APPLICATION NO PCT/EP99/06827		INTERNATIONAL FILING DATE 15 September 1999		PRIORITY DATE CLAIMED 15 September 1999
TITLE OF INVENTION Method of Notifying a Call Forwarding Party				
APPLICANT(S) FOR DO/EO/US Marko SIISKONEN; Jukka WALLENIOUS				
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:				
<ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371. 2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371 3. <input checked="" type="checkbox"/> This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1). 4. <input checked="" type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date. 5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)) <ol style="list-style-type: none"> a. <input checked="" type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau). b. <input checked="" type="checkbox"/> has been transmitted by the International Bureau. c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US) 6. <input type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)). 7. <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)) <ol style="list-style-type: none"> a. <input checked="" type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau). (See Reply to Written Opinion) b. <input checked="" type="checkbox"/> have been transmitted by the International Bureau. c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. d. <input type="checkbox"/> have not been made and will not be made. 8. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)). 9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). Unexecuted 10. <input type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)). 				
Items 11. to 16. Below concern other document(s) or information included:				
<ol style="list-style-type: none"> 11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98. 12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included. 13. <input checked="" type="checkbox"/> A FIRST preliminary amendment. <ol style="list-style-type: none"> <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment. 14. <input type="checkbox"/> A substitute specification. 15. <input type="checkbox"/> A change of power of attorney and/or address letter. 16. <input checked="" type="checkbox"/> Other items or information (<i>specify</i>): PCT Publication Sheet, Int'l Preliminary Examination Report, Written Opinion Reply to Written Opinion, PCT Request, Information Concerning Elected Offices Notified of their Election, Notice Informing the Applicant of the Communication of the International Application to the Designated Offices, Notification of the Recording of a Change (Nokia Telecommunication to Nokia Networks Oy), Notification of the Recording of a Change (Nokia Networks Oy to Nokia Corporation), and Notification of Receipt of Record Copy 				

U.S. APPLICATION NO. (If known, see 37 CFR 1.5) 10/069320		INTERNATIONAL APPLICATION NO PCT/EP99/06827		ATTORNEY'S DOCKET NUMBER 4925-209PUS	
17.[x]The following fees are submitted:					
Basic National Fee (37 CFR 1.492(a)(1)-(5)): Search Report has been prepared by the EPO or JPO\$890.00 International preliminary examination fee paid to USPTO (37 CFR 1.482).....\$710.00 No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2)).....\$740.00 Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO\$1040.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4)\$100.00					
ENTER APPROPRIATE BASIC FEE AMOUNT =				\$	890
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$	
Claims	Number Filed	Number Extra	Rate		
Total Claims	43 - 20 =	23	x \$18.00	\$	774
Independent Claims	3 - 3 =		x \$84.00	\$	
Multiple dependent claim(s) (if applicable)			+ \$280.00	\$	
TOTAL OF ABOVE CALCULATIONS =				\$	1664
Reduction of 1/2 for filing by small entity, if applicable.				\$	
SUBTOTAL =				\$	1664
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				\$	
TOTAL NATIONAL FEE =				\$	1664
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by the appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property				\$	
TOTAL FEES ENCLOSED					\$1664
Amount to be refunded:				\$	
charged:				\$	
a. [x]One check in the amount of \$1664 to cover the above fee is enclosed. b. <input type="checkbox"/> Please charge my Deposit Account No. <u>03-2412</u> in the amount of \$_____ to cover the above fees. A duplicate copy of this sheet is enclosed. c. [x]The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>03-2412</u> . A duplicate copy of this sheet is enclosed.					
NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.					
SEND ALL CORRESPONDENCE TO: <u>Michael C. Stuart</u> Cohen, Pontani, Lieberman & Pavane 551 Fifth Avenue, Suite 1210 New York, New York 10176			 <u>Michael C. Stuart</u> Registration Number: <u>35,698</u> <u>February 19, 2002</u> Tel: (212) 687-2770		

By Express Mail # EV052763564US · February 19, 2002

Attorney Docket # 4925-209PUS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re National Phase PCT Application of

Marko SIISKONEN et al.

International Appln. No.: PCT/EP99/06827

International Filing Date: 15 September 1999

For: Method of Notifying a call Forwarding Party

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents

Washington, D.C. 20231

BOX PCT

S I R:

Prior to examination of the above-identified application, amend the application as follows:

IN THE SPECIFICATION:

Page 22, delete lines 33 to 35.

Page 23, delete lines 1 and 2, and insert therefor the following new paragraph:

-- Thus, while there have been shown and described and pointed out fundamental novel features of the present invention as applied to a preferred embodiment thereof, it will be understood that various omissions and substitutions and changes in the form and details of the devices described and illustrated, and in their operation, and of the methods described may be made by those skilled in the art without departing from the spirit of the present invention. For example, it is expressly intended that all combinations of those elements and/or method steps which perform substantially the same function in substantially the same way to achieve the same results are within the scope of

the invention. Substitutions of elements from one described embodiment to another are also fully intended and contemplated. It is the intention, therefore, to be limited only as indicated by the scope of the claims appended hereto.--.

Page 24, line 1, delete "Claims" and insert therefor --What is claimed is:--.

IN THE CLAIMS:

Amend 14, 23 and 24 to read as follows:

14. A method according to claim 1, wherein a break-off condition of said forwarded call is predefined by a user of said terminal (T22), and said notification is sent when said break-off condition is fulfilled (S10), after which said method further comprises the step of prompting said user (S14, S15) of said terminal (T22) to accept or refuse a continuation of said forwarded call.

23. A communication network according to claim 20, wherein at least some of the functionalities of said call forwarding service device (CFS), said measuring device (CDM), said notification sending service device (NSS) and said voice processing server device (VPS) are implemented into one single device (SD).

24. A communication network according to claim 20, wherein at least one of the functionalities of said call forwarding service device (CFS), said measuring device (CDM), said notification sending service device (NSS) and said voice processing server device (VPS) is distributed over at least two different devices.

Add the following new claims:

28. A method according to claim 2, wherein a break-off condition of said forwarded call is predefined by a user of said terminal (T22), and said notification is sent when said break-off condition is fulfilled (S10), after which said method further comprises the step of prompting

said user (S14, S15) of said terminal (T22) to accept or refuse a continuation of said forwarded call.

29. A method according to claim 3, wherein a break-off condition of said forwarded call is predefined by a user of said terminal (T22), and said notification is sent when said break-off condition is fulfilled (S10), after which said method further comprises the step of prompting said user (S14, S15) of said terminal (T22) to accept or refuse a continuation of said forwarded call.

30. A method according to claim 4, wherein a break-off condition of said forwarded call is predefined by a user of said terminal (T22), and said notification is sent when said break-off condition is fulfilled (S10), after which said method further comprises the step of prompting said user (S14, S15) of said terminal (T22) to accept or refuse a continuation of said forwarded call.

31. A method according to claim 5, wherein a break-off condition of said forwarded call is predefined by a user of said terminal (T22), and said notification is sent when said break-off condition is fulfilled (S10), after which said method further comprises the step of prompting said user (S14, S15) of said terminal (T22) to accept or refuse a continuation of said forwarded call.

32. A method according to claim 6, wherein a break-off condition of said forwarded call is predefined by a user of said terminal (T22), and said notification is sent when said break-off condition is fulfilled (S10), after which said method further comprises the step of prompting said user (S14, S15) of said terminal (T22) to accept or refuse a continuation of said forwarded call.

33. A method according to claim 7, wherein a break-off condition of said forwarded call is predefined by a user of said terminal (T22), and said notification is sent when said break-off condition is fulfilled (S10), after which said method further comprises the step of prompting said user (S14, S15) of said terminal (T22) to accept or refuse a continuation of said forwarded call.

34. A method according to claim 8, wherein a break-off condition of said forwarded call is predefined by a user of said terminal (T22), and said notification is sent when said break-off condition is fulfilled (S10), after which said method further comprises the step of prompting said user (S14, S15) of said terminal (T22) to accept or refuse a continuation of said forwarded call.

35. A method according to claim 9, wherein a break-off condition of said forwarded call is predefined by a user of said terminal (T22), and said notification is sent when said break-off condition is fulfilled (S10), after which said method further comprises the step of prompting said user (S14, S15) of said terminal (T22) to accept or refuse a continuation of said forwarded call.

36. A method according to claim 10, wherein a break-off condition of said forwarded call is predefined by a user of said terminal (T22), and said notification is sent when said break-off condition is fulfilled (S10), after which said method further comprises the step of prompting said user (S14, S15) of said terminal (T22) to accept or refuse a continuation of said forwarded call.

37. A method according to claim 11, wherein a break-off condition of said forwarded call is predefined by a user of said terminal (T22), and said notification is sent when said break-off condition is fulfilled (S10), after which said method further comprises the step of prompting

said user (S14, S15) of said terminal (T22) to accept or refuse a continuation of said forwarded call.

38. A method according to claim 12, wherein a break-off condition of said forwarded call is predefined by a user of said terminal (T22), and said notification is sent when said break-off condition is fulfilled (S10), after which said method further comprises the step of prompting said user (S14, S15) of said terminal (T22) to accept or refuse a continuation of said forwarded call.

39. A method according to claim 13, wherein a break-off condition of said forwarded call is predefined by a user of said terminal (T22), and said notification is sent when said break-off condition is fulfilled (S10), after which said method further comprises the step of prompting said user (S14, S15) of said terminal (T22) to accept or refuse a continuation of said forwarded call.

40. A communication network according to claim 21, wherein at least some of the functionalities of said call forwarding service device (CFS), said measuring device (CDM), said notification sending service device (NSS) and said voice processing server device (VPS) are implemented into one single device (SD).

41. A communication network according to claim 22, wherein at least some of the functionalities of said call forwarding service device (CFS), said measuring device (CDM), said notification sending service device (NSS) and said voice processing server device (VPS) are implemented into one single device (SD).

42. A communication network according to claim 21, wherein at least one of the functionalities of said call forwarding service device (CFS), said measuring device (CDM), said

notification sending service device (NSS) and said voice processing server device (VPS) is distributed over at least two different devices.

43. A communication network according to claim 22, wherein at least one of the functionalities of said call forwarding service device (CFS), said measuring device (CDM), said notification sending service device (NSS) and said voice processing server device (VPS) is distributed over at least two different devices.

REMARKS

This preliminary amendment is presented to place the application in proper form for examination and to eliminate multiple dependency from the present claims. No new matter has been added. Early examination and favorable consideration of the above-identified application is earnestly solicited.

Attached hereto is a mark-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made".

Any additional fees or charges required at this time in connection with the application may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,
COHEN, PONTANI, LIEBERMAN & PAVANE

By: _____



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19 February 2002

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By Express Mail # EV052763564US · February 19, 2002

AMENDMENTS TO THE SPECIFICATION AND CLAIMS SHOWING CHANGES

In the Claims:

14. A method according to claim 1 [any one of claims 1 to 13], wherein a break-off condition of said forwarded call is predefined by a user of said terminal (T22), and said notification is sent when said break-off condition is fulfilled (S10), after which said method further comprises the step of prompting said user (S14, S15) of said terminal (T22) to accept or refuse a continuation of said forwarded call.

23. A communication network according to claim 20 [any one of the claims 20 to 22], wherein at least some of the functionalities of said call forwarding service device (CFS), said measuring device (CDM), said notification sending service device (NSS) and said voice processing server device (VPS) are implemented into one single device (SD).

24. A communication network according to claim 20 [any one of the claims 20 to 22], wherein at least one of the functionalities of said call forwarding service device (CFS), said measuring device (CDM), said notification sending service device (NSS) and said voice processing server device (VPS) is distributed over at least two different devices.

METHOD OF NOTIFYING A CALL FORWARDING PARTYField of the Invention

- 5 The present invention relates to a method of notifying a call forwarding party about a forwarded call. Particularly, the present invention relates to a method of limiting a duration of a forwarded call.
- 10 Furthermore, the present invention relates to a communication network and a terminal being capable for that purpose.

Related Background Art

- 15 Recently, a major benefit connected with the use of mobile terminals like mobile phones or the like is the increased flexibility the user gains. Accordingly, providing a service for forwarding incoming calls which
- 20 cannot be accepted was a logical consequence.

For a further convenience of this service, the user has to be notified in one way or the other that a forwarding took place. Basically, such a notification is known from

25 the blue book specification Q.730 of the International Telegraph and Telephone Consultative Committee (CCITT). This specification, however, teaches nothing about the contents or the implementation of such a notification.

- 30 From document US-A-4 476 349 there is known a call message service which generates and stores a callback message for a called terminal. This message is able to notice the identity of the calling terminal and the identity of the destination of the forwarding.
- 35 Additionally, the forwarded times are stored, i.e. it is

noticed when the forwarded calls took place. However, the subject matter of document US-A-4 476 349 is directed to a service in private branch exchanges (PBX) and the information about the forwarded calls provided by this service must be retrieved by dialing a feature code from a phone.

Summary of the Invention

- 10 Accordingly, it is an object of the present invention to provide a method of notifying a call forwarding party about a forwarded call which is free from the above drawbacks.
- 15 In particular, the present invention aims to provide a respective method which is applicable to modern extended communication networks. Consequently, the present invention proposes a communication network and a terminal for that purpose.
- 20 According to the present invention, this object can be solved by a method of notifying a call forwarding party about a forwarded call, wherein said method comprises the following steps: Firstly, a call from a calling party is forwarded to a destination defined by a call forwarding party; then, a content of a notification about said forwarded call is established; finally, said notification is sent by a service of a communication network to a terminal of said call forwarding party, wherein said notification comprises said content.

The defining of the destination by the call forwarding party may be an indirect process, for example, a set of possible forwardings to different numbers may have been specified by the call forwarding party. However, a

forwarding service may determine the number, which can be based on several criteria.

The content of the notification can comprise information about a calling party number, a call duration, a type of forwarding, a time of forwarding, a call charge and a number to which said call has been forwarded. According to the present invention, it is at least one of those, but a maximum of information included in the notification increases the benefit of the present invention. Moreover, if the information comprised by said content of said notification corresponds to data which is processable by said terminal of said call forwarding party, which can be the case according to the present invention, there can even more comfortable advantages be achieved.

One thereof can be that it is possible to predefine a break-off condition for said forwarded call by a user of said terminal, and that said notification is sent when said break-off condition is fulfilled, after which said user of said terminal is prompted to accept or refuse a continuation of said forwarded call. Having processable data in the notification, the aforementioned could be easily obtained while without processable data an implementation would be rather difficult but still conceivable. The expression "processable" in this connection is to be understood such that data corresponding to the information included in the notification comes along in a format which allows a direct processing by the respective terminal. That is, for example, that different content of the notification can be easily distinguished, and so on.

Clear examples for such a break-off condition are a maximal call charge or a maximal call duration, because

if the call forwarding party pays for the forwarding leg, she or he may be very interested to limit such calls but have the possibility to decide from case to case whether the forwarding call can continue. Accordingly, this
5 break-off condition can depend on the calling party number, including the possibility that no break-off condition exists for some certain calling party numbers.

Although it is clear that an input to said terminal in
10 reaction to said prompting can be manually performed by the user of said terminal and said forwarded call would be cleared if there is no input within a specified time, it might be rather more important that a reaction of said terminal to said prompting is automatically performed
15 according to a presetting of said terminal, which presetting would be input by said user. The automated case is advantageously supported if processable data is present in the aforesaid sense.

20 According to the present invention, the object can further be achieved by a communication network comprising a call forwarding service device which is able to determine a calling party number; a device for measuring a call duration of a forwarding call; and a service
25 device for sending a notification to a terminal of a call forwarding party, thus having the substantial elements for carrying out some aspects of the present invention.

However, it is also desirable that the call forwarding
30 service device is also able to determine a type of forwarding, a time of forwarding, a call charge and a number to which said call has been forwarded.

With respect to an implementation of the functionalities
35 of a call forwarding service device, a measuring device,

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a notification sending service device and other devices advantageous for carrying out the invention, it is of course conceivable that at least some of them are implemented into one single device, or on the other hand, that a single functionality is distributed over several devices.

Furthermore, according to the present invention, there is provided a terminal for a handling of call forwarding, wherein said terminal comprises means adapted for setting a call forwarding service device of a communication network to which network said terminal subscribes; means adapted for receiving a notification about a forwarded call; and means adapted for displaying a content of said notification. According to the aforesaid it is advantageous if the terminal further comprises means for processing data corresponding to information comprised by said content of said notification, and another advantageous modification of the terminal is if it further comprises means for automatically performing a reaction to a prompting of a user of said terminal by a service of said communication network for sending said notification, which automatic performance is preset by said user.

25

It is to be noted that, throughout the present specification, CAMEL and IN designates any solution in which a call, connection or session processing node contacts a service control function which issues instructions to the respective node. The contact to the service control function is based on a trigger information stored in the respective nodes. The trigger information may specify situations in the course of a call, connection or session handling. The service control function may be internally distributed. Moreover, the

35

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corresponding IN protocol could be any protocol between a controlling entity, such as a service controller (e.g. CAMEL Service Environment, CSE), responsive to a triggering from a call, and a session or connection
5 processing node. The IN protocol may be e.g. an object oriented interface where the operations are object methods or invocations.

It is to be noted further that throughout the present
10 specification, WAP and WTA designate any solution in which there is a content execution environment (user agent) at the terminal side and this environment is capable of controlling terminal (MS) functionalities such as call control, mobility management MM and user
15 interface. Furthermore, the execution environment may receive content from the network spontaneously or it may be provided with references to content to be downloaded. The content may be hypertext, markup language code, any interpreted or even native or virtual machine code.

20 Further advantages of the present invention will become apparent from the description of the preferred embodiments of the present invention, which will be described herein below by way of example with reference
25 to the accompanying drawings.

Brief Description of the Drawings

Fig. 1 shows a flow chart representing an extended
30 embodiment of the present invention.

Fig. 2 shows a schematic view of the elements of a communication network and their interaction as is presented by this invention.

Fig. 3 shows a signaling sequence between certain devices of a communication network according to a further embodiment of the present invention.

- 5 Fig. 4 shows a signaling sequence between certain devices of a communication network according to a still further embodiment of the present invention.

Description of the Preferred Embodiments

10

Referring now to Fig. 1, there is shown a flow-chart of a method of notifying a call forwarding party about a forwarded call, wherein the most common cases of the invention presently conceivable are depicted for an
15 overview in toto.

- As can be gathered from Fig. 1, the starting condition for the depicted procedure is that a call is forwarded. This may usually be the case if a terminal of a user
20 which is called is presently closed or has lost contact with a respective communication network. More complicated circumstances for an activation of a call forwarding are of course conceivable. However, the present invention is in any case not limited to the reason for call
25 forwarding.

- In a following step S10, the procedure distinguishes between the cases if simply a notification about a forwarded call is sent to the call forwarding party, or
30 if network, terminal, and user, respectively, shall interact with the call forwarding process. Namely, the point is whether a break-off condition for the call forwarding is present or not.

Consequently, if there is no break-off condition, the call will be forwarded in its full length corresponding to step S11 of Fig. 1. According to the present forwarding services and those to come, there might be a lot of parameters in which call forwardings might differ from each other. These parameters, however, can be of particular interest to the call forwarding party, i.e. a user of a terminal which has been called. Of course, the identity of the calling party (its number) and the time when the calling and in consequence the forwarding took place obviously are of interest to the called party. Moreover, if the forwarding service of the respective communication network allows to activate different forwarding designations, e.g. depending on the calling number or the like, this would of course also be of interest to know. Further examples for such parameters are the type of forwarding, the duration of the forwarded call and the charge of the forwarded call, wherein still further examples are conceivable.

As is apparent from these above examples for such parameters, either they are immediately clear in the moment when the forwarded path is established, or they develop with the forwarded call thus being fixed with the end of the call. Since the present invention aims to notify a call forwarding party about a forwarded call, the content of this notification should be established in close connection to the performance of the call forwarding. When the step S12 of establishing the content of the notification is finished, which may typically be with the end of the forwarded call, the notification can be sent to the call forwarding party in a step S13. In conclusion, a process for notifying a call forwarding party about a forwarded call is completed therewith. In any case, it is to be noted that the present invention is

not limited to such a close connection of the content establishment to the end of the forwarded call.

However, since it might be usual that the call forwarding party pays for the forwarding leg, it is clear that there might be the wish to limit the duration of a forwarded call. By the same token, the charge for the forwarded call can be dependent from other factors, thus, if all those factors are known, the forwarding party might wish to expressly have an upper charge limit for one forwarded call.

In this case, a break-off condition for the forwarded call will indeed be present in step S10 of the present procedure. According to the present invention, this break-off condition is of course not limited to the two aforesaid examples but can rather be chosen among all of those mentioned above as parameters of a forwarded call and others conceivable.

Anyway, if there is a break-off condition present in step S10, the call will be forwarded in a step S11' until this break-off condition is met. For an establishment of a content of a respective notification about the forwarded call in a step S12' the same is valid as was mentioned above in connection with the step S12.

The notification to be sent in a step S13' will now contain a hint that a forwarded call was interrupted due to the meeting of a break-off condition, and thus, the user of a terminal where the notification will be received and displayed, respectively, is prompted in a step S14 to accept the continuation of the forwarded call or not. If the call is related to an important business or private relationship, it seems to be appropriate to

accept, otherwise maybe not. However, the possibility to limit the amount of costs for call forwarding charges while having the opportunity to individually extent a call duration in a forwarding connection is a very comfortable and flexible feature of the present invention.

In any case, the refusal of the continuation of the forwarded call will lead to a clearing of this call while the acceptance would result in the forwarded calls continuation until its end. Since the reason for activating a forwarding service could in many cases be the fact that a terminal is closed or for other reasons physically not reachable, or simply for the sake of convenience, an automated decision according to step S15 would be even more comfortable. Such an automated decision can have more or less conditions in which cases a forwarded call is allowed to continue despite of a met break-off condition, e.g. certain calling party numbers are allowed to continue "eternally" thus resulting in that there is no break-off condition present for them at all. A more complicated structure of such an automated process is according to the present invention conceivable and its possibility intended. Anyway, such an automated process will most likely be based on the calling numbers.

In contrast thereto, deciding by a manual input to the terminal, to which the notification is sent, over the continuation of a forwarded call might in some cases be more appropriate. However, this case is also included in the present invention, but brings along the theoretical drawback that the network waits for this input of the user. Hence, to solve this problem, a timer can be activated after the expiry of which the forwarded call is cleared.

In any case, if the result of step S15 is that the forwarded call shall continue, there is a step S11'' in which the forwarding of the call until its end is performed. Optionally, also then a notification can be sent to the user in a step S13'' about all or exclusively the unknown parameters of this "second part" of the forwarded call. Consequently, in that case a step S12'' of establishing a content of the notification would exist which corresponds to the aforesaid about such content establishment.

Referring now to Fig. 2, there are shown the elements of a communication network being capable to adopt the present invention.

As can be gathered from Fig. 2, there is a terminal T21 calling a terminal T22. This terminal T22, however, has one or more forwarding conditions set which are now fulfilled. Accordingly, the call is forwarded by a call forwarding service device CFS to a forwarding destination FD. To this call forwarding service device, many of the aforementioned parameters of call forwarding might be apparent, as the number of the calling terminal T21, the type of call forwarding, the time of call forwarding, the call charge, and the destination number. By determining these parameters, a lot of the content of the notification according to the present invention can be established. However, for those parameters which perhaps are not apparent to this call forwarding service device, according to the present invention there is a device for that purpose provided, for example a call duration measurement device CDM for measuring the call duration.

- Having the content of the notification established, the notification is sent to the terminal T22 by a notification sending service device NSS for displaying the information about the forwarded call. It is to be
- 5 noted that according to the present invention it is not necessary that the notification is sent to the originally called terminal, but can be sent to any terminal of the called user which terminal can be predetermined.
- 10 If a break-off condition is provided according to the aforesaid, the user of the terminal T22 will manually or automatically send an answer to the call forwarding service device whether a forwarded call might continue or not. However, at the very moment when the break-off
- 15 condition is met, the call forwarding service device CFS interrupts the forwarded call. Then, either the call forwarding service device CFS waits for a specified time period whether an answer arrives from the terminal, or in case of an automated process or when said answer arrives,
- 20 the call forwarding service device CFS immediately acts in correspondence with the automated or manual input answer. Accordingly, if the specified time period has expired or the answer was "no", the forwarded call according to the forwarding path is cleared, and if the
- 25 answer was "yes", the call forwarding continues.

Although there are several devices mentioned here for carrying out the invention, it is expressly mentioned that the number of devices is irrelevant for that

30 purpose, for example, all functionalities necessary for providing a communication network according to the present invention can be included in a single device SD. On the other hand, according to the present invention it is not necessary that a functionality is implemented

35 alone or with other functionalities in one device, that

is, each of the aforesaid functionalities can be distributed over several devices which, together, form sort of a logical device for carrying out the respective imparted functionality. For example, the call forwarding
5 device and its functionality, respectively, can be distributed over communication network entities such as a mobile services switching center (MSC), a CAMEL (Customized Application for Mobile network Enhanced Logic) service environment (CSE) and a Wireless Telephony
10 Applications server or just over a mobile services switching center (MSC) and a short message service center (SMSC) and so on.

The present invention can be very beneficial implemented
15 by the use of the so-called intelligent network (IN). Therein, the forwarded call can be triggered from the forwarding gateway mobile services switching center (GMSC) or from the forwarding home location register to the Customized Applications for Mobile network Enhanced
20 Logic (CAMEL) Service Environment (CSE) service logic, which requests the sending of the notification.

Furthermore, also the Wireless Application Protocol (WAP) with its Wireless Telephony Application (WTA) can be
25 beneficially used for implementing the present invention. In this case, the notification can provide the numbers or the forwarding indication to a respective terminal and the user can retrieve the numbers by using a WAP application.

30 One embodiment of the type of the notification would be a message of the short message service (SMS). Similarly, also a packet data bearer may be used for the sending of the notification.

In case of an implementation among the intelligent network, the sending of the SMS is done by a service control point (SCP), so that the forwarding leg of the call triggers to this SCP.

5

Another embodiment of the type of the notification can be a terminal terminated unstructured supplementary service data (USSD) which may also request a response from the user, while still another embodiment is that there is a voice processing server VPS, as shown in Fig. 2, which provides the respective information. Such a voice notification can be accompanied by processable data for the purpose as explained above.

10

As regards the case of limiting the forwarded call duration there is also a beneficial use of WTA possible. The separate specification WTA brought along with WAP enables WAP to interwork with voice services. The WTA provides several means therefor.

20

Accordingly, WTA comprises service indications that enable a WTA server to instruct the user agent (i.e. browser) to download and execute the WAP content from a uniform resource locator (URL) given in the service indication. The WAP content addressed in the URL can also be downloaded to a user agent repository inside the terminal beforehand.

25

The WTA comprises also a WTAI (Wireless Telephony Applications Interface) which is an application programmable interface (API) that enables WAP content to invoke functions in the mobile station, e.g. make calls, answer calls, send SMS, handle mutlicalls, access phonebook etc. WTA also comprises event catalogues that

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enable the WAP content to intercept events like an incoming call, SMS etc.

Besides, it is noted that a WTA server may act in communication with a CSE or with a MSC or with a home location register (HLR) for the mentioned purposes.

Consequently, according to the present invention, there is an embodiment in which all forwarded calls are triggered either in the GMSC or in the visited mobile services switching center (VMSC) from the forwarding party originating basic call state model (O-BCSM). The triggered intelligent network service logic measures a total duration for the forwarded call. When a duration or price threshold is reached for a given call or alternatively for all forwarded calls within a certain time period, a WTA service indication is given for the terminal of the forwarding user. The user is then prompted for acceptance to continue the forwarded call. If there is no answer from the forwarding user within a specified time, the forwarded call is cleared. The WTA service indication and duration monitoring may be triggered only for numbers not within a list of allowed numbers.

25

The benefit of the use of WAP/WTa is that only a data message bearer is needed for the communication with the forwarding party. Another benefit of the use of WAP/WTa is the possibility for the WAP/WTa user agent to automatically indicate the forwarding content to the forwarding party without a need for her or him to separately check and retrieve incoming short messages.

Referring now to Fig. 3, an embodiment of the present invention will be described in the following, wherein

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concrete examples for the contributing devices are given and the description is made by listing the process of signaling between these devices. Whenever it is described hereinafter that information is exchanged (words like
5 send, submit and so on) one should bear in mind that this is based on a signaling between the respective devices (this is also valid for Fig. 4 to be described later).

Specifically, Fig. 3 shows an embodiment of unconditional
10 forwarding delimited by utilizing the IN/WAP embodiment of the present invention.

At first, the A-terminal signals an setup message SETUP (a call setup message) to a calling party switch A-EX.
15 Then, the calling party switch A-EX submits an initial address message to the gateway mobile services switching center GMSC including, for example, numbers of the A-terminal and the B-terminal and so on. Next, a routing information request is sent from the GMSC to a home
20 location register HLR including the B-subscriber number and so on. Thereafter, the home location register HLR responds with a C-number (the number to which the call is forwarded) and a redirection cause for which the call is redirected. After that, the gateway mobile services
25 switching center sends an InitialDP message, i.e. a triggering message containing a detection point initializing containing the A-, B-, and C-number and the redirection cause to a CAMEL service environment CSE and a service logic.

30

At this point in the process, the delimitation service is started in the CAMEL service environment CSE. Thus, the CAMEL service environment CSE requests the reporting of call disconnection from the gateway mobile services
35 switching center GMSC. This essentially causes that a

control relationship remains between the CAMEL service environment CSE and the gateway services switching center GMSC. Then, the CAMEL service environment CSE instructs the gateway services switching center GMSC to continue
5 call processing.

Then, the gateway mobile services switching center GMSC signals an initial address message IAM to a destination party switch C-EX, and the destination party switch C-EX
10 answers with an answer message ANM. The answer event is then reported to the CAMEL service environment CSE, again followed by a respective call continue instruction.

Next, a timer is started and its expiry awaited. After
15 that expiry, the CAMEL service environment submits a content generation request to a WTA server. The forwarding content is generated into the WTA-server, e.g. a time of forwarding, the A-subscriber number, the redirection cause and so on. A uniform resource locator
20 URL is sent by the WTA server to the B-terminal/user agent MS-B/UA, e.g. a WAP browser.

Alternatively, the generated content, i.e. the WAP deck or hyper text markup language (HTML) page, is directly
25 pushed to the terminal using WAP push, i.e. a uniform resource location indication (WTA service indication) followed by a content retrieval by the terminal are not needed as separate steps. Additionally, in some implementations, the WTA server functionality and the
30 CAMEL service environment CSE could be integrated into one node and functionality, where the steps as shown in Fig. 3 for the WTA server and the CAMEL services environment are performed.

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Referring now back to Fig. 3, the WTA server sends the uniform resource locator to the B-terminal/user agent MS-B/UA, e.g. a WAP browser. Then, the B-terminal/user agent MS-B/UA submits a uniform resource location

5 request, i.e. content request to the WTA server, which server answers the request, after which the WTA server is informed by the B-terminal/user agent MS-B/UA what to do further. Accordingly, the WTA server submits a result to the CAMEL services environment CSE which, in turn,

10 signals to the gateway mobile services switching center GMSC to release the call. A respective release message REL is sent from the gateway mobile services switching center firstly to the calling party switch A-EX and secondly to the destination party switch C-EX.

15 Although the process may continue further, the substantial signaling procedures according to this embodiment of the present invention are described so far.

20 According to still another embodiment of the present invention, the call forwarding can also be instructed by the CAMEL service environment CSE. This is the case, for example, where a forwarding service in the CAMEL service environment CSE is notified that the called party is

25 busy, unreachable or does not answer. The forwarding destination can in intelligent network based services be based on several other criteria like time-of-day, calling party number and forwarding party location (obtained to the CAMEL service environment CSE from the home location

30 register HLR or an event geographic location server), even some calling party selection via a voice menu provided by the forwarding service to the calling party is possible. The CAMEL service environment CSE instructs call forwarding to the MSC. The CAMEL service environment

35 CSE starts supervising the call, and notifies the

forwarding party when a specified time or charge limit has been reached.

The benefit of the use of the invention in the context of intelligent network (IN) based call forwarding services is that the called party may not be aware which forwarding conditions are applicable at a given moment and which have resulted in the forwarding of the call. Therefore, the called party should be made aware of the fact that the call forwarding has occurred.

Thus, as can be gathered from Fig. 4, a call is established from an A-terminal to a calling party switch A-EX by a setup message SETUP and from there to a gateway mobile services switching center. Therein, a triggering is obtained by a first home location register inquiry. Next, the gateway mobile services switching center GMSC sends an InitialDP message, i.e. a triggering message to the CAMEL service environment containing e.g. the calling and the called party numbers. The call forwarding or rerouting service is started at the CAMEL service environment CSE. Then, the CAMEL service environment CSE requests the report of outcomes in call setup, i.e. it arms the detection points for route select failure, busy, no answer and answer events. After that, the CAMEL service environment CSE allows the call setup to continue in the gateway mobile services switching center GMSC.

Next, a routing information is sent from the GMSC to a home location register HLR including the B-subscriber number and so on. In turn, the home location register requests a visited mobile services switching center VMSC to provide a terminal roaming number MSRN which is respectively answered by the visited mobile services switching center. As a consequence, the home location

register HLR responds to the gateway mobile services switching center with the terminal roaming number and data of the B-terminal. Accordingly, the call proceeds further from the gateway mobile services switching center
5 GMSC to the visited mobile services switching center VMSC, from which the call is setup to the B-terminal/user agent MS-B/UA.

However, according to this embodiment of the present
10 invention, the case is considered that the B-terminal does not reply. Hence, the gateway mobile services switching center reports to the CAMEL services environment with a basic call state model event 'no answer'. Then the CAMEL services environment CSE requests
15 the gateway mobile services switching center GMSC to route the call to the number C# by a using Connect operation. Then, the call is forwarded by the gateway mobile services switching center GMSC to the destination party switch C-EX.

20 If only a notification on call forwarding is desired, the steps of content generation request, content generation and so on should follow e.g. after the CAMEL service environment CSE has issued the Connect operation.

25 At some time, there will be an answer from the destination party switch C-EX. Next, a timer is started and its expiry awaited. After that expiry, the CAMEL services environment submits a content generation request
30 to a WTA server. The forwarding content is generated into the WTA-server, e.g. a time of forwarding, the A-subscriber number, the redirection cause and so on. Generally, the forwarding content may include the conditions that have resulted in call forwarding. A

uniform resource locator URL is sent by the WTA server to the B-Terminal/user agent MS-B/UA, e.g. a WAP browser.

In an alternative embodiment, the forwarding content may
5 provide to the called party a selection where the forwarding party warns the calling party and the forwarded-to party that the call is about to be released. Later on, the forwarding party may select that the call is immediately released. The forwarding party may also be
10 prompted for the duration the call is allowed to continue.

Alternatively, the generated content, i.e. the WAP deck or hyper text markup language (HTML) page, is directly
15 pushed to the terminal using WAP push, i.e. a uniform resource location indication (WTA service indication) followed by a content retrieval by the terminal are not needed as separate steps. Additionally, in some implementations, the WTA server functionality and the
20 CAMEL service environment CSE could be integrated into one node and functionality, where the steps as shown in Fig. 4 for the WTA server and the CAMEL services environment are performed.

25 Referring now back to Fig. 4, the WTA server sends the uniform resource locator to the B-terminal/user agent MS-B/UA, e.g. a WAP browser. Then, the B-terminal/user agent MS-B/UA submits a uniform resource location request, i.e. a content request to the WTA server, which
30 server answers the request, after which the WTA server is informed by the B-terminal/user agent MS-B/UA what to do further. Accordingly, the WTA server submits a result to the CAMEL services environment CSE which, in turn, signals to the gateway mobile services switching center
35 GMSC to release the call. With the performance of the

call releasing, the substantial parts of the signaling sequence according to the present embodiment of the present invention are depicted.

- 5 In still another embodiment of the present invention, the B-terminal/user agent MS-B/UA may be configured to automatically reply to the forwarding content. However, in that case the forwarding content may just be a data message in machine interpretable form. The data message
10 is received, interpreted and replied by a specific content downloaded to the terminal beforehand. The decision for reply is based on user preferences entered by the user beforehand.
- 15 In yet another embodiment, an executable forwarding content received by the terminal at the step of URL request reply, i.e. a wireless markup language deck or a hypertext markup language page or a Java code reads user stored preference data from the terminal and makes a
20 reply decision on its own to the WTA server.

As is described above, the present invention provides a method of notifying a call forwarding party about a forwarded call, said method comprising the steps of
25 forwarding a call S11 from a calling party T21 to a destination FD defined by said call forwarding party T22; establishing a content S12 of a notification about said forwarded call; and sending said notification S13 by a service NSS of a communication network to a terminal T22
30 of said call forwarding party, wherein said notification comprises said content.

It should be understood that the above description and accompanying figures are only intended to illustrate the
35 present invention by way of example. The preferred

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embodiments of the present invention may thus vary within the scope of the attached claims.

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Claims

1. A method of notifying a call forwarding party about a forwarded call, said method comprising the steps of
- 5 forwarding a call (S11) from a calling party (T21) to a destination (FD) defined by said call forwarding party (T22);
- establishing a content (S12) of a notification about said forwarded call; and
- 10 sending said notification (S13) by a service (NSS) of a communication network to a terminal (T22) of said call forwarding party, wherein said notification comprises said content.
- 15 2. A method according to claim 1, wherein said content comprises information about at least one of a calling party number, a call duration, a type of forwarding, a time of forwarding, a call charge and a number to which said call has been forwarded.
- 20 3. A method according to claim 1, wherein said information comprised by said content of said notification corresponds to data which is processable by said terminal (T22) of said call forwarding party.
- 25 4. A method according to claim 1, wherein said type of said notification is that of a message of the Short Message Service.
- 30 5. A method according to claim 1, wherein said type of said notification is that of terminal terminated Unstructured Supplementary Service Data.

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6. A method according to claim 1, wherein said sending of the notification is performed by utilizing a packet data bearer.

5 7. A method according to claim 1, wherein said type of said notification is a speech transmission of a voice processing server (VPS).

10 8. A method according to claim 1, wherein said service (NSS) responsive for sending said notification to a terminal (T22) of a call forwarding party is a service within the Customized Applications for Mobile network Enhancement Logic Service Environment.

15 9. A method according to claim 1, wherein said service (NSS) responsive for sending said notification to a terminal (T22) of a call forwarding party is a service within a Wireless Telephony Applications server.

20 10. A method according to claim 1, wherein said service (NSS) responsive for sending said notification to a terminal (T22) of a call forwarding party is a service within intelligent network service control point or CAMEL service environment (CSE).

25

11. A method according to claim 1, wherein said call forwarding is requested by a forwarding service within intelligent network service control point or CAMEL service environment (CSE).

30

12. A method according to claim 1, wherein said content includes at least part of the conditions that have resulted in call forwarding.

13. A method according to claim 12, wherein said conditions are the data on which said forwarding service has made the decision to forward the call.

- 5 14. A method according to any one of claims 1 to 13, wherein a break-off condition of said forwarded call is predefined by a user of said terminal (T22), and said notification is sent when said break-off condition is fulfilled (S10), after which
- 10 said method further comprises the step of prompting said user (S14, S15) of said terminal (T22) to accept or refuse a continuation of said forwarded call.
- 15 15. A method according to claim 14, wherein said break-off condition is one of a maximal call charge and a maximal call duration.
16. A method according to claim 14, wherein said break-off condition depends on the calling party number, including the possibility that no break-off condition exists for some certain calling party numbers.
- 20 17. A method according to claim 14, wherein an input to said terminal (T22) in reaction to said prompting (S14) is manually performed by said user.
- 25 18. A method according to claim 17, wherein said forwarded call is cleared if there is no input within a specified time.
- 30 19. A method according to claim 14, wherein a reaction of said terminal (T22) to said prompting is automatically performed according to a presetting of said terminal (T22), which presetting is input by said user.
- 35

20. A communication network comprising
a call forwarding service device (CFS) which is able
to determine a calling party number;
5 a device for measuring a call duration (CDM) of a
forwarding call; and
a service device (NSS) for sending a notification to
a terminal (T22) of a call forwarding party.
- 10 21. A communication network according to claim 20,
wherein said call forwarding service device (CFS) is also
able to determine a type of forwarding, a time of
forwarding, a call charge and a number (FD) to which said
call has been forwarded.
- 15 22. A communication network according to claim 20,
further comprising a voice processing server device
(VPS) .
- 20 23. A communication network according to any one of the
claims 20 to 22, wherein at least some of the
functionalities of said call forwarding service device
(CFS), said measuring device (CDM), said notification
sending service device (NSS) and said voice processing
25 server device (VPS) are implemented into one single
device (SD) .
24. A communication network according to any one of the
claims 20 to 22, wherein at least one of the
30 functionalities of said call forwarding service device
(CFS), said measuring device (CDM), said notification
sending service device (NSS) and said voice processing
server device (VPS) is distributed over at least two
different devices.

25. A terminal for a handling of call forwarding, said terminal (T22) comprising

means adapted for setting a call forwarding service device (CFS) of a communication network to which network
5 said terminal (T22) subscribes;

means adapted for receiving a notification about a forwarded call; and

means adapted for displaying a content of said notification.

10

26. A terminal according to claim 25, further comprising means for processing data corresponding to information comprised by said content of said notification.

15 27. A terminal according to claim 26, further comprising means for automatically performing a reaction (S15) to a prompting (S14) of a user of said terminal (T22) by a service (NSS) of said communication network for sending said notification, which automatic performance is preset
20 by said user.

25

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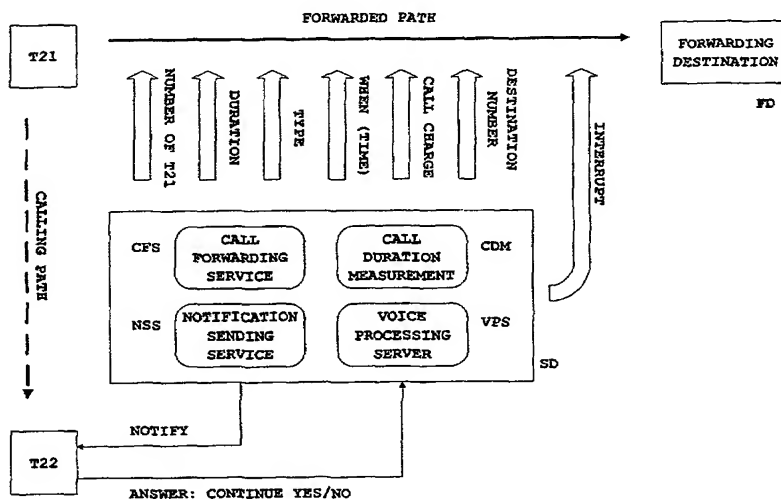
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **METHOD OF NOTIFYING A CALL FORWARDING PARTY**



(57) Abstract: The present invention provides a method of notifying a call forwarding party about a forwarded call, said method comprising the steps of forwarding a call (S11) from a calling party (T21) to a destination (FD) defined by said call forwarding party (T22); establishing a content (S12) of a notification about said forwarded call; and sending said notification (S13) by a service (NSS) of a communication network to a terminal (T22) of said call forwarding party, wherein said notification comprises said content.

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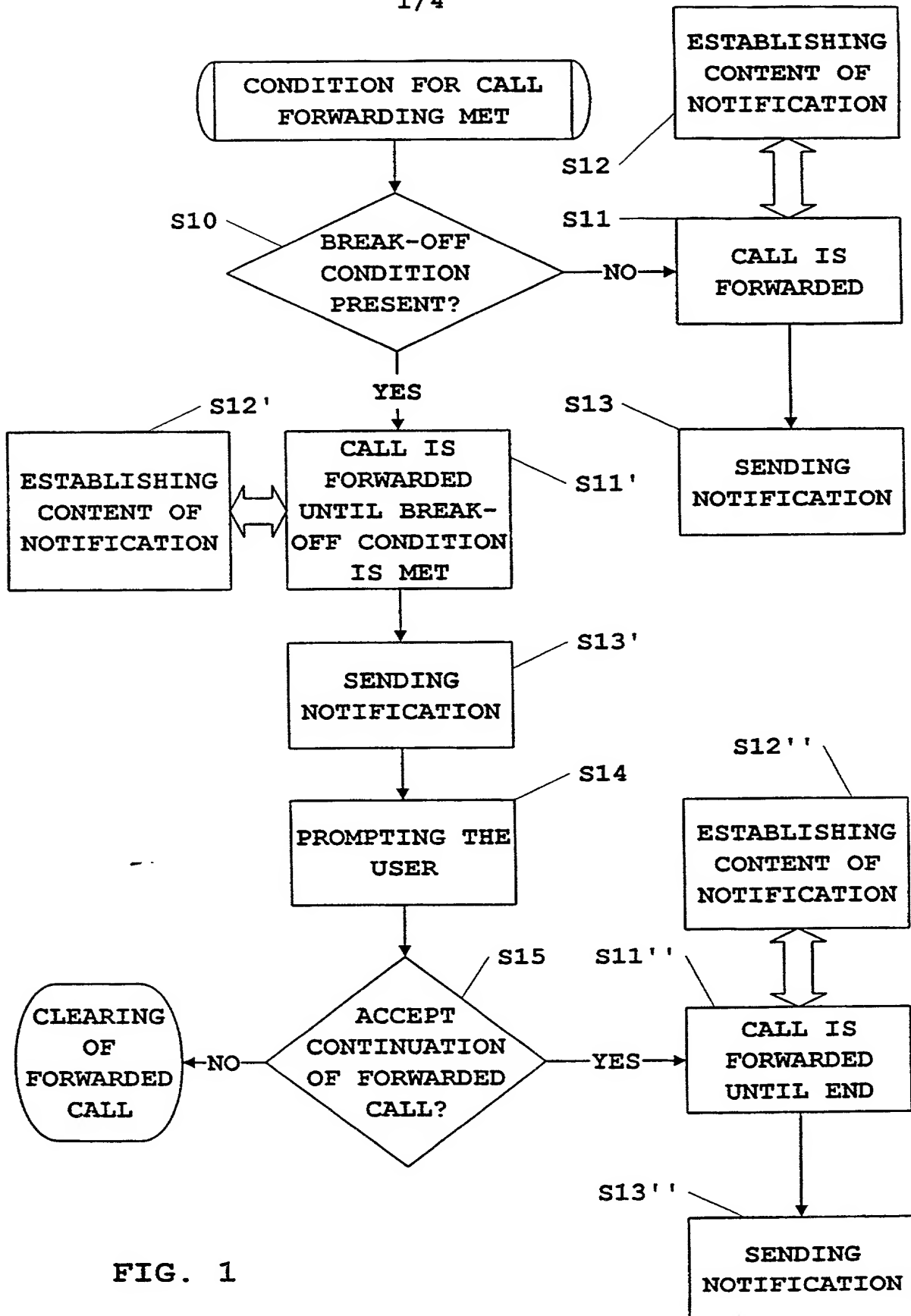


FIG. 1

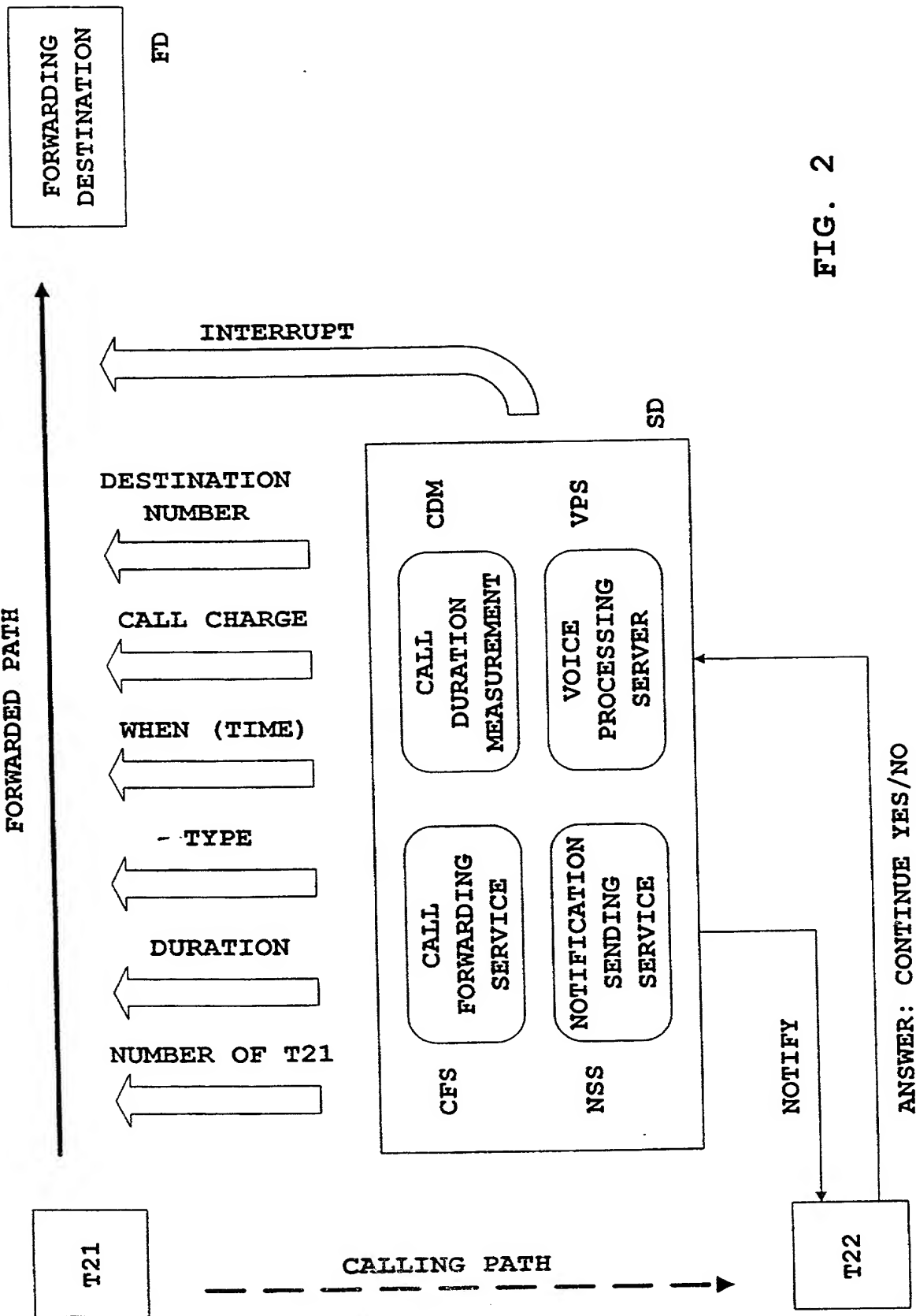


FIG. 2

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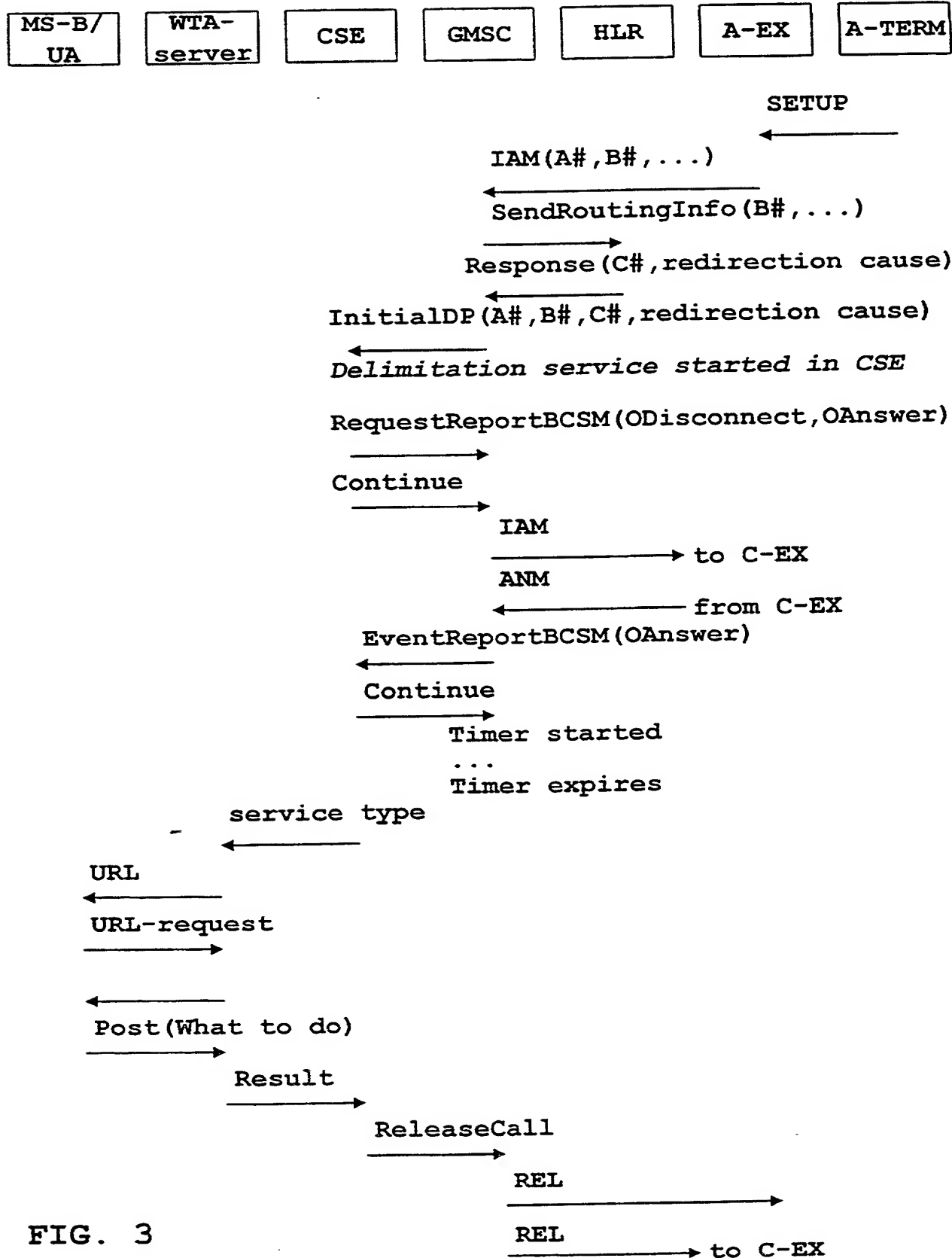


FIG. 3

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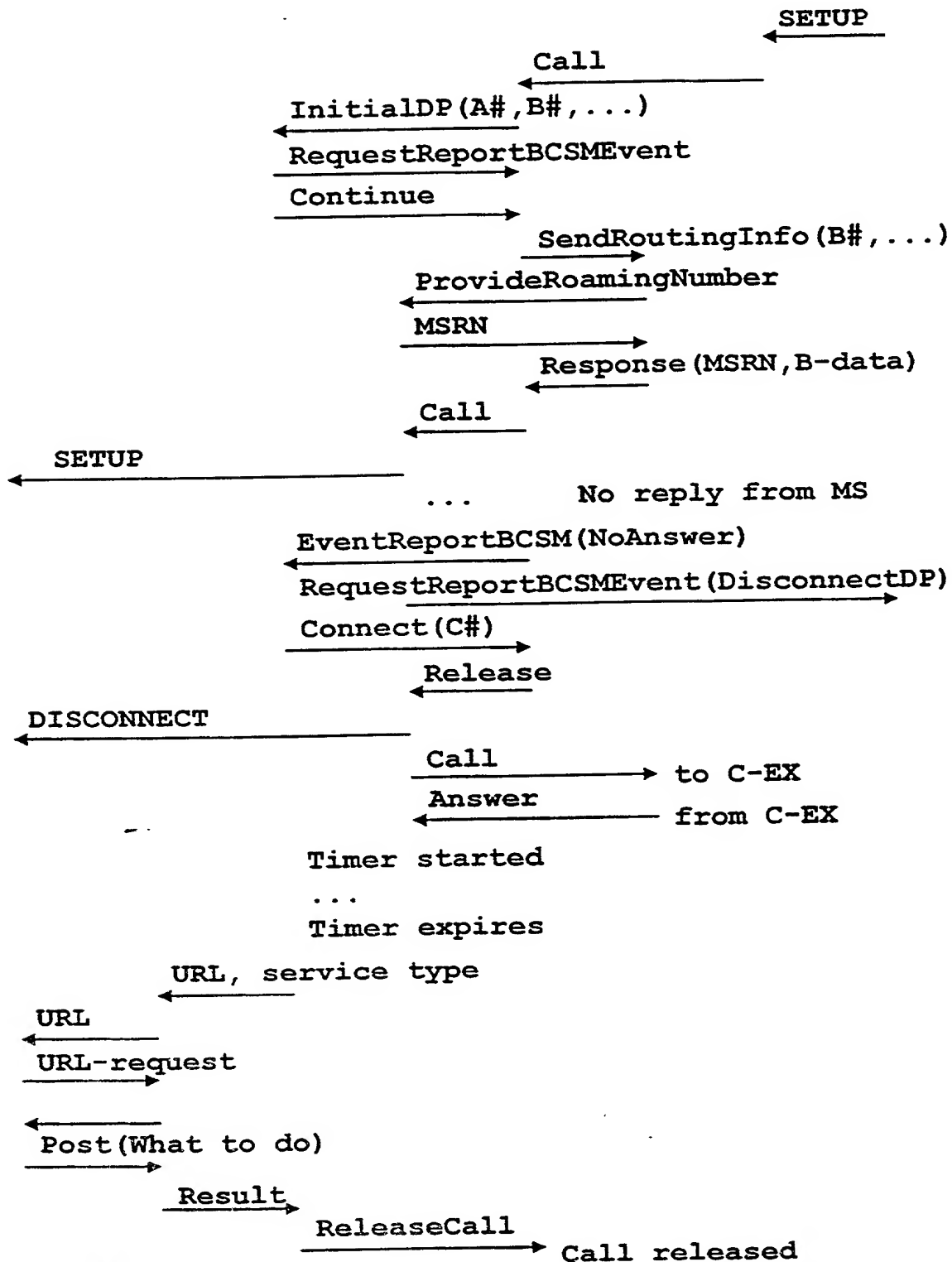
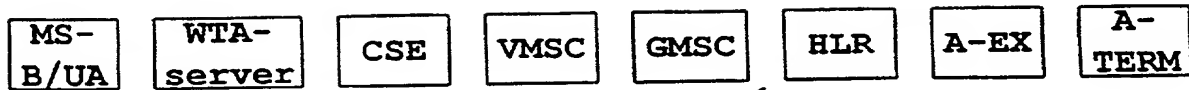


FIG. 4

US 33514

COMBINED DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY
 Includes Reference to PCT International Applications

 Attorney's Docket
 No. 4925-209PUS

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

METHOD OF NOTIFYING A CALL FORWARDING PARTY

the specification of which (check only one item below)

☐ is attached hereto

☐ was filed as United States application

Serial No. _

on _

and was amended

on _ (if applicable).

☒ was filed as PCT international application

 Number PCT/EP99/06827

 on 15 September 1999

and was amended under PCT Article 19

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I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of the application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

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Country (if PCT, indicate "PCT")	Application Number	Date of Filing (day, month, year)	Priority Claimed Under 35 U.S.C. 119	
			<input type="checkbox"/> YES	<input type="checkbox"/> NO
PCT	PCT/EP99/06827	15 September 1999	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
			<input type="checkbox"/> YES	<input type="checkbox"/> NO
			<input type="checkbox"/> YES	<input type="checkbox"/> NO
			<input type="checkbox"/> YES	<input type="checkbox"/> NO
			<input type="checkbox"/> YES	<input type="checkbox"/> NO
			<input type="checkbox"/> YES	<input type="checkbox"/> NO

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Combined Declaration for Patent Application and Power of Attorney (Continued)
(Includes Reference to PCT International Applications)

Attorney's Docket No.
4925-209PUS

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application:

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PCT APPLICATIONS DESIGNATING THE U.S.				
PCT APPLICATION NO.	PCT FILING DATE	U.S. SERIAL NUMBERS ASSIGNED (if any)		
PCT/EP99/06827	15 September 1999		x	

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith (*List name and registration number*)

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Combined Declaration for Patent Application and Power of Attorney (Continued)
(Includes Reference to PCT International Applications)

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2 0 3	FULL NAME OF INVENTOR	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

SIGNATURE OF INVENTOR 201 X 	SIGNATURE OF INVENTOR 202 X 	SIGNATURE OF INVENTOR 203
DATE X 3/22/2002	DATE X 3/20/2002	DATE

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